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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/806,775

07/09/2001

Markku Rajala

.0386/00294

5959

7590

09/26/2006

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EXAMINER

HOFFMANN, JOHN M

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/806,775

Applicant(s)

RAJALA ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7-11-2006 has been entered.

Information Disclosure Statement

The information disclosure statement filed 16 Feb 2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. Although an English language abstract was provided, a copy of the patent itself was not provided. Also, the quality of the abstract was of too poor of quality to accurately depict the drawing – it was illegible. Examiner guesses it was due to a resolution of a fax machine was set too low.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 51-52 and 44-45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for the limitation that the nozzle is common to the plurality of tubes (claim 44) or that the three tubes plus the end of claim 51 are "at" a common nozzle. Examiner could not find any literal basis for these new limitations. As to implicit support, examiner could not find any definition in dictionary, nor any explanation as to what is meant by "common" (see below 112-2nd paragraph rejection) that makes clear sense. If the term merely means that the tubes, nozzles and end are all part of the same apparatus, then (of course) there is basis for that. But such an interpretation would suggest that the word "common" actually carries substantially no weight – because (generally speaking) all structure used together in a process can be thought of as being a single apparatus. The Office rarely declares a word (in this case 'common') to carry no weight without good reason. And Applicant has not given any indication that the word should be given no weight. Therefore, Examiner is left to assume that applicant intends the word "common" to denote something other than the features are all part of the same apparatus. Examiner is unable to figure out what applicant means by "common".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 44- 45 and 51-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As indicated above, Examiner cannot ascertain what is meant by the nozzle being common to the plurality of tubes (claim 44) or that the three tubes plus the end of claim 51 are "at" a common nozzle.

Claim 44, line 5 indicates that gas is "through nozzle" – it is unclear if that should be interpreted as *through a nozzle*.

Claim 44: line 3 requires that the nozzle has tubes (i.e. at least 2). Lines 9 and 12 refer to two different tubes – it is unclear whether they are in addition to the tubes of line 3 (i.e. for a total of 4). In other words, there is confusing antecedent basis for the tubes.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 37, 38 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawtof 6565823 in view of Takahashi 4388098.

Hawtof discloses everything of claim 1, except for the liquid solution. See figure 1 and 4 (and the associated text). It unambiguously discloses supplying a fuel gas (methane) through a nozzle (40) to produce a flame 23. As per col. 7, lines 31-44, there

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a liquid and a "small portion" of vapor. The small portion is deemed to be the first glass component and the liquid is the second glass component. The second glass component contains a rare earth metal (see claim 2 and from col. 8, line 63 to col. 9, line 10 of Hawtof); as indicated above, there is no teaching that it is a solution. As to the step of introducing an atomizing gas: Hawtof col. 8, lines 40-45.

Hawtof also does not disclose first and second particles which combine with each other to form multicomponent glass particles. It is noted from page 5, lines 6-17 of the present application that it is "unclear" to applicant what actually happens. In as much as that passage states that applicant states that it can be "assumed" as to what happens, it is deemed that one can likewise assume the same thing would happen in Hawtof because Hawtof also has a vapor and liquid. Although Examiner is not an expert in flame science/experimentation, to Examiner it might be impossible for one to be able to determine whether two different types of particles are actually created in a flame as a precursor to the multi-component glass particles. Alternatively, it would seem possible that a potential competitor could substantially copy the present invention, and necessarily avoid infringement because one could not prove (at best one could only 'assume') whether the first and second particles were created or whether the oxides condensed equally to all particles.

Hawtof does not disclose much of anything about the dopant precursors. Takahashi discloses that there are difficulties (col. 1, lines 27- 53) when adding dopants. Takahashi discloses the solution to the problem - that nebulized solutions of the metal salts is "quite simple" and ensures fibers with low loss (col. 1, lines 67). It is

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noted that Takahashi's lanthanum oxide is a rare earth metal oxide. It would have been obvious to provide the Hawtof rare earth dopant by using a solution of a lanthanum salt because such is quite simple and it ensures a fiber with low loss.

Claims 38, and 41 are clearly met.

Claims 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawtof 6565823 in view of Takahashi 4388098 as applied to claims 37-38 and further in view of Ainslie 4923279.

Hawtof does not teach the specific elements erbium and aluminum.

Ainslie teaches that erbium is one of the two "most important" rare earths and that one can make oscillators, lasing devices and amplifiers; and that aluminum eliminates losses of dopants (col. 1, lines 13-26 and 48-53 col. 3, lines 19-25 and col. 2, lines 40-45. It would have been obvious to use erbium as the Hawtof rare earth because it is most important and so as to make oscillators, amplifiers and lasing devices. And further obvious to use aluminum dopant (by adding an aluminum salt solution) so as to prevent the loss of dopants.

Claims 37-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randall 3883336 in view of Hawtof 6565823, Ainslie 4923279, and Takahashi 4388098.

See the prior Office action for the manner in which the art is applied.

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Claims 46-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randall 3883336 in view of Hawtof 6565823, Ainslie 4923279, Takahashi 4388098 and Finnish patent 98832.

Claims 46-52 are substantially the same as the claims above, however claims 46-52 require that the fuel gas be used to cause the atomizing – which is not taught by the other references. From the last two full sentences of page 5 of the English language translation of the Finnish patent: fuel gas is used to atomize the liquid so as to produce small particles quickly, inexpensively and in one phase. It would have been obvious to use a fuel gas for the Hawtof atomizing, so as to make the particles quickly, inexpensively and in one phase.

Alternatively and/or additionally, the bottom of page 9 and elsewhere of the Finnish patent indicate that the flow of gases through the burner is a result-effective variable. It would have been obvious to perform routine experimentation to determine the optimal material-feed arrangement depending upon the desired final product.

From MPEP 2144.04**C. Changes in Sequence of Adding Ingredients**

Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

Response to Arguments

Applicant's arguments filed 11 July 2006 have been fully considered but they are not persuasive.

It is argued that claim 44 has been amended to clarify that the tubes are among the plurality of tubes. The claims do clearly state this, however this is indefinite as to what it means. One cannot tell if it means the tubes are physically among the other tube, or if they are actually part of the plurality. In other words – if it is the first case, then the apparatus must have at least 4 tubes, in the second case, there need only be two tubes.

It is argued that Examiner has failed to provide a convincing line of reasoning as to why one would be motivated to combine Hawtof and Takahashi. Examiner believes the provided line of reasoning would be convincing.

It is also argued that the claimed method produces internally homogeneous multicomponent glass particles – and that the prior art does not teach the desirability of this purpose. This is largely irrelevant – obviousness does not require a particular purpose or desirability therefore. The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

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Applicant argues that Hawtof discloses clustered defects. If this is true, Applicant should point to where Hawtof discloses this – by column and line number – so that Examiner can see whether this is an accurate summary of Hawtof. Examiner could not find such disclosure. However, it does not seem that it would necessarily be very relevant – the claims are comprising in nature and thus is open to having features not claimed. The claims do not specify any number of particles – thus only two homogeneous particles need to be created to meet the claim limitations. In other words: Applicant should point out what specific limitation(s) in the claim(s) prevent the inclusion of the purported clustered defects of Hawtof.

At the bottom of page 11 it is argued that one cannot reasonably expect success because (as Examiner understands it) the components vaporize differently. Examiner does not doubt that one might have problems with a direct/physical substitution of liquids/reactants – without changing any other operating parameter. But applicant has not shown this to be very relevant.

From MPEP 2145:

"The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.... Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). See also *In re Sneed*, 710 F.2d 1544, 1550, 218 USPQ 385, 389 (Fed. Cir. 1983) ("[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review."); and *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973) ("Combining the teachings of references does not involve an ability to combine their specific structures.").

To the degree that Applicant argues this position without setting forth any evidence, it is deemed that it is applicant's position that evidence is not necessary – because

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everyone skill would know it to be true. This is deemed tantamount to an admission by applicant that one of ordinary skill knows the liquids will vaporize at different temperatures. And since it is well known that the liquids vaporize at different temps, one would know that temperature is a result effective variable and could set the process at a workable temperature. Alternatively: Applicant's arguments are not convincing because there is no evidence to support the assertion the liquids will vaporize in the same conditions. Arguments cannot take the place of evidence.

It is argued that Hawtof that it is generally undesirable to introduce vaporous reactant. Examiner could find no such suggestion. The plain reading of Hawtof is that a portion of the reactant can be vapor form without adversely affecting the invention (col. 7, lines 42-44). Even if there is some portion of Hawtof that teaches of undesirability, when weighed against the passage of col. 7, line 42-44, such a suggestion would not overcome the propriety of the combination.

From MPEP 2145:

A prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness; however, "the nature of the teaching is highly relevant and must be weighed in substance. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994) (Claims were directed to an epoxy resin based printed circuit material. A prior art reference disclosed a polyester-imide resin based printed circuit material, and taught that although epoxy resin based materials have acceptable stability and some degree of flexibility, they are inferior to polyester-imide resin based materials. The court held the claims would have been obvious over the prior art because the reference taught epoxy resin based material was useful for applicant's purpose, applicant did not distinguish the claimed epoxy from the prior art epoxy, and applicant asserted no

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discovery beyond what was known to the art.)
(emphasis added by examiner)

Hawtof's teaching is that vaporous ingredients might be somewhat inferior. As indicated above, Applicant cannot get a patent merely because Hawtof indicates it is somewhat inferior. Hawtof had full concept of that aspect of Applicant's invention

As to the argument that Ainslie is limited to MCVD – there is no rationale or evidence to support this assertion. Ainslie's teaching of the advantage of using rare earths would be understood to be advantageous to all fibers – not merely those made by MCVD.

As to the argument that one would not seek to combine the Hawtof and Randall processes. This is deemed largely irrelevant because the rejection is not based on combining processes – rather the rejection is based on modifying the Randall process. See page 9 of the 4/26/2005 rejection.

It is argued that Takahashi nebulizes not in the vicinity of the flame. It is clear that Takahashi's nebulization is in a vicinity. Applicant has not demonstrated that the term "vicinity" would exclude Takahashi's location.

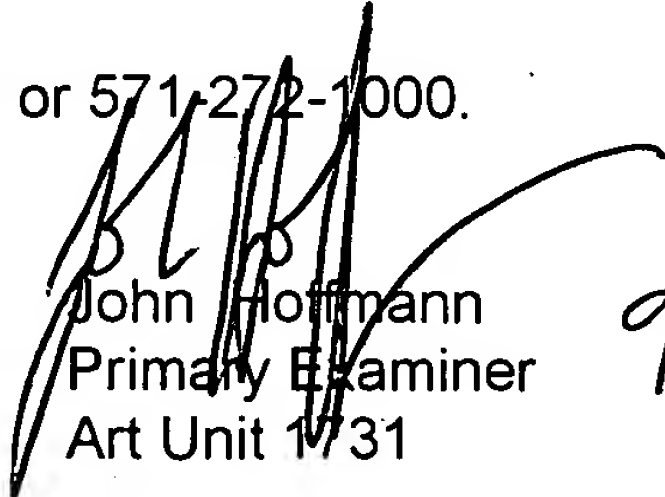
It is further argued the aqueous solution is not delivered through the same nozzle as required by the present claims. Examiner disagrees, the claims do not require an aqueous solution being delivered through a nozzle.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


John Hoffmann
Primary Examiner
Art Unit 1731

9-21-06

jmh